What is claimed is:

1. A aminopolycarboxylate-appended peptide useful for radioiodinating an antibody selected from the group consisting of:

(ABG)Gly-D-Tyr-D-Lys(ITC-Bz-DTPA)-OH

(ABG-D-Ala-D-Tyr-D-Tyr-D-Lys)-APC;

$(ABG\text{-}D\text{-}Ala\text{-}D\text{-}Tyr\text{-}D\text{-}Tyr\text{-}D\text{-}Lys)_2$-APC;

MCC-Lys (MCC)-Lys((1-(*p*-CSNH)benzyl)DTPA)-D-Tyr-D-Tyr-D-Lys((1-(*p*-NH)benzyl) DTPA)-OH;

ABG-Lys(MCC)-Lys((1-(*p*-CSNH)benzyl)DTPA)-D-Tyr-D-Lys((1-(*p*-CSNH)benzyl) DTPA)-OH;

ABG-Asp-D-Tyr-D-Lys((1-(*p*-CSNH)benzyl) DTPA)-OH;

ABG-Lys(MCC)-Asp-D-Tyr-D-Lys((1-(*p*-CSNH)benzyl) DTPA)-OH;

ABG-Asp-D-Tyr-D-Lys((1-(*p*-CSNH)benzyl) DTPA)-OH; and

ABG-Lys(MMC)-Asp-D-Tyr-D-Lys((1-(*p*-CSNH)benzyl) DTPA)-OH;

wherein ABG is an antibody binding group and APC is an aminopolycarboxylate.

2. A aminopolycarboxylate-appended peptide according to claim 1, wherein the antibody binding group is maleimidomethylcyclohexylcarbonyl or maleimidomethylcarbonyl.

3. A aminopolycarboxylate-appended peptide according to claim 1, wherein the aminopolycarboxylate is NTA (nitrilotriacetic acid), EDTA, DTPA or TTHA or derivatives thereof.

4. A method for preparing a stable antibody conjugate, comprising:

(i) preparing an aminopolycarboxylate-appended peptide comprising one or more D-tyrosine units and an antibody binding group;

(ii) radiohalogenating aminopolycarboxylate-appended peptide provided in (i) to provide an radiohalogenated aminopolycarboxylate-appended peptide; and

(iii) conjugating the radiohalogenated aminopolycarboxylate-appended peptide to an antibody.

5. The method of claim 4, wherein the number of amino acids in the peptide is 2-42.

6. The method of claim 4, wherein the aminopolycarboxylate is directly bound to a D-lysine and the D-lysine is directly attached to a D-tyrosine.

7. The method of claim 4, wherein the aminopolycarboxylate-appended peptide comprises:

(a) a peptide that comprises at least one D-tyrosine or tyramine, an amino terminus, a carboxy terminus formed from a D-lysine and no contiguous L-amino acids between the D-tyrosine or tyramine and the carboxy terminus;

(b) an aminopolycarboxylate conjugated via one of its carboxylic acid groups to the peptide via an ε-amino group of the D-lysine to form an aminopolycarboxylate-appended peptide; and

(c) a linker group for covalently binding said aminopolycarboxylate-appended peptide to an antibody.

8. The method of claim 7, wherein said linker group is capable of reacting with a sufhydryl residue of an antibody to form a covalent bond.

9. The method of claim 7, wherein said peptide contains 5-40 amino acids.

10. The method of claim 4, wherein said tyramine or D-tyrosine is directly linked to said D-lysine.

11. The method of claim 4, wherein the aminopolycarboxylate is bound to the peptide via an amide bond or thiourea.

12. The method of claim 4, wherein the aminopolycarboxylate is NTA (nitrilotriacetic acid), EDTA, DTPA or TTHA or derivatives thereof.

13. A method for preparing a stable antibody conjugate, comprising:

(i) conjugating a tyramine to an aminopolycarboxylate;

(ii) conjugating an antibody binding group to a backbone of said aminopolycarboxylate; and

(iii) conjugating aminopolycarboxylate to an antibody.

14. The method of claim 13, wherein the aminopolycarboxylate is selected from EDTA, DTPA or TTHA.

15. The method of claim 13, wherein the aminopolycarboxylate is a bifunctional aminopolycarboxylate.

16. A method for preparing a stable antibody conjugate, comprising:

(i) preparing a peptide comprising one or more D-tyrosine units and an antibody binding group;

(ii) reductively coupling a reducing carbohydrate to the peptide to provide a carbohydrate-appended peptide;

(iii) radiohalogenating the carbohydrate-appended peptide;

(iv) conjugating the radiohalogenated carbohydrate-appended peptide to an antibody.

17. The method of claim 16, wherein the peptide comprises:

(a) a peptide that comprises at least one D-tyrosine, an amino terminus, a carboxy terminus formed from a D-lysine and no contiguous L-amino acids between the D-tyrosine and the carboxy terminus; and

(b) a linker group for covalently binding said carbohydrate-appended peptide to an antibody.

18. The method of claim 16, wherein the carbohydrate is derived from melibiose.

19. The method of claim 16, wherein the carbohydrate is derived from lactose.

20. A method for preparing a stable antibody conjugate, comprising the steps of:

(i) preparing peptides comprising one or more D-tyrosine, and other D- or L-amino acids;

(ii) attaching a protein-binding cross linker to the peptide;

(iii) radiohalogenating the peptide; and

(iv) conjugating the radiohalogenated bifunctional peptide to antibodies.

21. The method of claim 20, wherein the total number of amino acid units in the peptide is 2-40.

22. The method of claim 20, wherein the amino acid attached to the protein-binding cross linker can be an L-amino acid.

23. A method for preparing a stable antibody conjugate comprising:

(i) radiohalogenating and oxidizing a carbohydrate-tyramine or a carbohydrate-(D)-tyrosine adduct; and

(ii) coupling to an antibody.

24. The method of claim 23, wherein the carbohydrate is dimelibiitoltyramine or melibiitoltyramine.

25. The method of claim 24, wherein the carbohydrate is melibiitol-(D)-tyrosine.

26. The method of claim 24, wherein the carbohydrate comprises an antibody-reactive moiety.

27. The method of claim 26, wherein the antibody-reactive moiety is an aldehyde, amine, isothiocyanate, N-hydroxysuccinimide ester, imidate ester, maleimide, bromo or iodoacetamide.

28. The method of claim 23, further comprising reacting the radiohalogenated carbohydrate with a maleimide-appended cyanuric chloride, and then reacting with a thiol-introduced antibody.

29. The method of claim 23, wherein the carbohydrate adduct is lactitoltyramine, dilactitoltyramine, melibiitoltyramine or dimelibiitoltyramine.